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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: MIKA AALTO, ET AL.

Application No.: 09/762,226	Group No.: 2145
Filed: March 7, 2001	Examiner: Choudhury, Azizul Q.

Title: INTERNET/INTRANET ACCESS MECHANISM

Commissioner for Patents
P.O. Box 1450
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ATTENTION: Board of Patent Appeals and Interferences

APPELLANT'S BRIEF (37 C.F.R. section 1.192)

This brief is in furtherance of the Notice of Appeal, filed in this case on July 8, 2005.

The fees required under Section 1.17(c), and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL.

This brief is transmitted in triplicate. (37 C.F.R. section 1.192(a))

I. REAL PARTIES IN INTEREST (37 C.F.R. section 1.192(c)(1))

The real party in interest in this appeal is the following party: Nokia Networks Oy.

II. RELATED APPEALS AND INTERFERENCES (37 C.F.R. section 1.192(c)(2))

There are presently no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS (37 C.F.R. section 1.192(c)(3))

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application are: 14

B. STATUS OF ALL THE CLAIMS IN APPLICATION

1. Claims canceled: none
2. Claims withdrawn from consideration but not canceled: none
3. Claims pending: 14
4. Claims allowed: none
5. Claims rejected: 14

C. CLAIMS ON APPEAL

The claims on appeal are: 14.

IV. STATUS OF AMENDMENTS (37 C.F.R. section 1.192(c)(4))

An Amendment under 37 C.F.R. § 1.111 was filed in and enter by the U.S. Patent and Trademark Office on November 16, 2004 in response to a July 8, 2004 Office Action. All claim amendments have been entered of record.

V. SUMMARY OF INVENTION (37 C.F.R. section 1.192(c)(5))

The invention solves or at least minimizes the problem of conventional Internet access mechanisms in that a specific end-user cannot be connected to a desired service provider with a minimal number of Permanent Virtual Circuits (PVCs) with a possibility of end-user authentication taking place only at the ends of the PVCs rather then at the Access Server Function (ASF).

In accordance with the invention, a tunneling protocol is established on the PVC between each Customer Premises Equipment (CPE) or Network Terminal Point (NT) and the ASF, wherein the tunneling protocol is able to support an integrated signaling protocol. An appropriate Service Provider (SP) is then selected based on the integrated signaling protocol. Routing to the selected SP is performed by the ASF. Finally, the ASF connects the CPE or NT to the selected SP using the integrated signaling protocol.

Within the context of the invention, the term "tunneling protocol" refers to a protocol which allows the creation and maintenance virtual private sessions via various network media such as IP, ATM, Frame Relay, etc. Correspondingly, the term 'integrated signaling protocol' (i.e., a signaling protocol integrated into the tunneling protocol) refers to a control protocol which is used for creating, maintaining and releasing these sessions.

In one invention embodiment, one permanent virtual connection PVC is provided from the ASF to each SP. Alternatively, there is provided a pool of permanent virtual connections from the ASF to each SP. One PVC is allocated to each CPE from this pool. As a further option, it is possible to establish one switched virtual connection (SVC) from the ASF to each SP, based on signaling, which the ASF receives from the CPE via the tunneling protocol.

The tunneling protocol can be established only in response to detecting appropriate user activity in a CPE. Alternatively, the tunneling protocol can be permanent and the integrated signaling is initiated and the user is authenticated only in response to detecting appropriate user activity in the CPE. As a further alternative, the user may be authenticated twice, first by the ASF using the tunneling protocol, and then by the SP.

VI. ISSUES (37 C.F.R. section 1.192(c)(6))

Whether claims 1-13 are patentable over the teachings of Malkin et al. (U.S. 6,061,650; hereafter "Malkin") under 35 U.S.C. 102(b)?

VII. GROUPING OF CLAIMS (37 C.F.R. section 1.192(c)(7))

The Claims of the group do not stand or fall together. Appellant(s) contend the claims are separately patentable.

VIII. ARGUMENTS

Appellants assert that claims 1-14 are patentable over the teachings of Malkin because Malkin fails to disclose, teach or suggest the all of the features recited in the rejected claims.

A. CLAIMED FEATURES MISSING FROM MALKIN

For example, Malkin fails to disclose, teach or suggest the claimed method for method for connecting one of several customer premises equipment via an ATM network to one of several service providers said method comprising "connecting each customer premises equipment to an ATM network via a corresponding network termination point; **forming an access server function having a permanent virtual**

connection to each NT and a connection to each service provider; establishing a tunnelling protocol on said permanent virtual connection between each NT and said access server function, said tunnelling protocol being able to support an integrated signalling protocol" as recited in independent claim 1 and its dependent claims.

Similarly, Malkin fails to disclose, teach or suggest the claimed network element providing an access server function for connecting each of several customer premises equipment via an ATM network to one of several service providers, said network element comprising "interface means to several network termination points, or network termination points for connecting each customer premises equipment to the ATM network via a corresponding network termination point; and **interface means to each service provider for providing a permanent virtual connection or a switched virtual connection thereto; means for using a tunnelling protocol on said permanent virtual connection between itself and each network termination point, said tunnelling protocol being able to support an integrated signalling protocol,**" as recited in independent claim 8 and its dependent claims.

B. TEACHINGS OF MALKIN

Malkin teaches a remote node 10 that contacts a service provider 14 to establish a remote connection with a home network 18 using the service provider's Remote Access Server (RAS) 12. The RAS 12 generates an authentication request, on behalf of the remote node 10, to obtain access to the home network 18. The RAS 12 then sends the authentication request to an authentication server 20 residing at the home network 18. The RAS 12 then establishes, on behalf of the remote node 10, a remote connection between the remote node 10 and the home network 18 to enable packets to be transferred between the remote node 10 and the home network 18.

Thus, Malkin uses the remote node 10 to dial into the RAS 12 to begin establishment of a connection with an Authentication Server (AS) 20 (see, col. 2, lines 25-48). Subsequently, the user's connection from the remote node 10 is conveyed via Customer Premises Equipment (CPE) 24, located in the home network 18, to the appropriate AS 20 (see, col. 2, lines 49 – 56), also located in the home network 18.

Accordingly, in Malkin, a user uses a remote node 10 and an access server RAS 12 to access an authentication server 20 via customer premises equipment 24.

C. OFFICE ACTION'S POSITION

The May 3, 2005 Office Action rejected claims 1-14 based on the presumption that the claimed customer premises equipment corresponds to Malkin's remote node 10, in functionality and operation. The Office Action also stated that the service provider referred to in the rejected claims allegedly corresponds to Malkin's "home computer;" however, the totality of Malkin's disclosure does not refer to a "home computer." Thus, Appellants present arguments for patentability based on the assumption that the Office Action was referring to the "home network" 18 referred to in Malkin. The Office Action also asserted that the access server function referred to in the rejected claims corresponds to Malkin's Remote Access Server (RAS) 12.

D. TRAVERSAL

Malkin fails to disclose, teach or suggest the all of the features recited in the rejected claims.

1. NO PERMANENT VIRTUAL CONNECTION

Malkin merely discloses a virtual circuit between the gateway 22 and CPE 24 (col. 2, line 51) but fails to disclose, teach or suggest whether the **virtual circuit** is a permanent virtual connection. More significantly, Malkin's virtual circuit or connection is not established between the RAS 12 (alleged to correspond to the claimed access server function) and any components that could reasonably considered to be "network termination points" or NT. Therefore, Malkin fails to disclose, teach or suggest that the RAS 12 has a permanent virtual connection to each NT and a connection the home network 18. Similarly, Malkin fails to disclose, teach or suggest a network element including interface means to the home network 18 for providing a permanent virtual connection or a switched virtual connection to the home network 18.

Thus, Malkin fails to disclose, teach or suggest "forming an access server function having a permanent virtual connection to each NT and a connection to each service provider," as recited in independent claim 1 and its dependent claims 2-7. Similarly, Malkin fails to disclose, teach or suggest a network element including "interface means to each service provider for providing a permanent virtual connection or a switched virtual connection thereto," as recited in independent claim 8 and its dependent claims 9-14.

2. NO ESTABLISHMENT OR USE OF A TUNNELLING PROTOCOL ON THE PERMANENT VIRTUAL CONNECTION

Malkin teaches that the RAS 12 queries the Tunnel Management System (TMS) 16 utilized by the service provider 14 using a user name and other information provided by the remote node 10. This query is for the address of the gateway 22 to the remote node's 10 home network 18 and other information needed to establish connection with a destination within the home network 18. The TMS 16 is a database that includes information that enables the RAS 12 to perform remote authentication on behalf of the node 10 and further establish open communication between the remote node 10 and the home network 18.

However, throughout the communication between the remote node 10 and the home network 18, the RAS 12 and the gateway 22 are the entities that establish and complete a "tunnel" between themselves to provide open communication "between the remote node 10 and the home network 18." (see, column 2, line 58 to column 3, line 5) Tunneling only occurs between the RAS 12 and the gateway 22; however, as explained above, Malkin only teaches a virtual connection between the gateway 22 (included in the home network 18) and the CPE 24 (also included in the home network 18) but fails to teach a virtual connection, permanent or otherwise, between the RAS 12 and the gateway 22.

Thus, Malkin fails to disclose, teach or suggest "establishing a tunnelling protocol on said permanent virtual connection between each NT and said access server function, said tunnelling protocol being able to support an integrated signalling protocol," as recited in independent claim 1 and its dependent claims 2-7. Similarly, Malkin fails to disclose, teach or suggest "means for using a tunnelling protocol on said permanent virtual connection between itself and each network termination point, said tunnelling protocol being able to support an integrated signalling protocol," as recited in independent claim 8 and its dependent claim 9-14.

IX. CONCLUSION

Therefore, Malkin fails to disclose, teach or suggest the claimed method for method for connecting one of several customer premises equipment via an ATM network to one of several service providers said method comprising forming an access server function having a permanent virtual connection to each NT and a connection to each service provider and establishing a tunnelling protocol on the permanent virtual connection between each NT and the access server function, the tunnelling protocol being able to support an integrated signalling protocol, as recited in independent claim 1 and its dependent claims.

Similarly, Malkin fails to disclose, teach or suggest the claimed network element providing an access server function for connecting each of several customer premises equipment via an ATM network to one of several service providers, the network element comprising interface means to each service provider for providing a permanent virtual connection or a switched virtual connection thereto and means for using a tunnelling protocol on the permanent virtual connection between itself and each network termination point, the tunnelling protocol being able to support an integrated signalling protocol, as recited in independent claim 8 and its dependent claims.

For at least the reasons discussed above, it is respectfully submitted that claims 1-14 are patentable over Malkin. For the above reasons, Appellant respectfully requests this Honorable Board to reverse the rejection of the claims.

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CLAIMS

1. (Previously Presented) A method for connecting one of several customer premises equipment via an ATM network to one of several service providers said method comprising:

connecting each customer premises equipment to an ATM network via a corresponding network termination point;

forming an access server function having a permanent virtual connection to each NT and a connection to each service provider;

establishing a tunnelling protocol on said permanent virtual connection between each NT and said access server function said tunnelling protocol being able to support an integrated signalling protocol;

the customer premises equipment or its user selecting an appropriate service provider by using said integrated signalling protocol;

performing routing from said customer premises equipment to said selected service provider by said access server function; and

said access server function connecting the customer premises equipment to the selected service provider using said integrated signalling protocol.

2. (Previously Presented) The method according to claim 1, further comprising providing one permanent virtual connection from the access server function to each service provider.

3. (Previously Presented) The method according to claim 1, further comprising providing a pool of permanent virtual connections from the access server function to each service provider; and allocating one connection to each network termination point from said pool.

4. (Previously Presented) The method according to claim 1, further comprising establishing one switched virtual connection from the access server function to each service provider, on the basis of signalling which the access server function receives from said customer premises equipment via said tunnelling protocol

5. (Previously Presented) The method according to claim 1, further comprising establishing said tunnelling protocol only in response to detecting appropriate activity in said customer premises equipment.

6. (Previously Presented) The method according to claim 1, further comprising establishing said tunnelling protocol permanently and initiating said integrated signalling and authenticating the user of said customer premises equipment only in response to detecting appropriate activity in said customer premises equipment.

7. (Previously Presented) The method according to claim 1, further comprising authenticating the user of said customer premises equipment both by said access server function and by the selected service provider.

8. (Previously Presented) A network element providing an access server function for connecting each of several customer premises equipment via an ATM network to one of several service providers said network element comprising:

interface means to several network termination points, or network termination points for connecting each customer premises equipment to the ATM network via a corresponding network termination point; and

interface means to each service provider for providing a permanent virtual connection or a switched virtual connection thereto;

means for using a tunnelling protocol on said permanent virtual connection between itself and each network termination point, said tunnelling protocol being able to support an integrated signalling protocol;

means for selecting an appropriate service provider in response to signalling from each customer premises equipment or its user, said selecting being carried out using said integrated signalling protocol;

means for supporting routing from each customer premises equipment to said selected service provider; and

connecting each customer premises equipment to the selected service provider using said integrated signalling protocol.

9. (Previously Presented) The network element according to claim 8, further comprising means for providing one permanent virtual connection from itself to each of several service providers.

10. (Previously Presented) The network element according to claim 8, further comprising means for providing a pool of permanent virtual connections from itself to each service provider and to allocate one connection to each active network termination point from said pool.

11. (Previously Presented) A network element access server function according to claim 8, further comprising means for providing a switched virtual connection from itself to at least one service provider .

12. (Previously Presented) The network element according to claim 8, further comprising means for providing a separate tunnel from itself to each of several customer premises equipments.

13. (Previously Presented) The network element according to claim 8, further comprising means for cooperating with an network termination point between itself and each customer premises equipment,

said network termination point being arranged to provide a separate tunnel from itself to each of several customer premises equipments and to combine the separate tunnels into fewer tunnels from itself to the network element.

14. (Previously Presented) The network element according to claim 13, wherein the number of said fewer tunnels is one.